Sims 3 Material Painter Tutorial

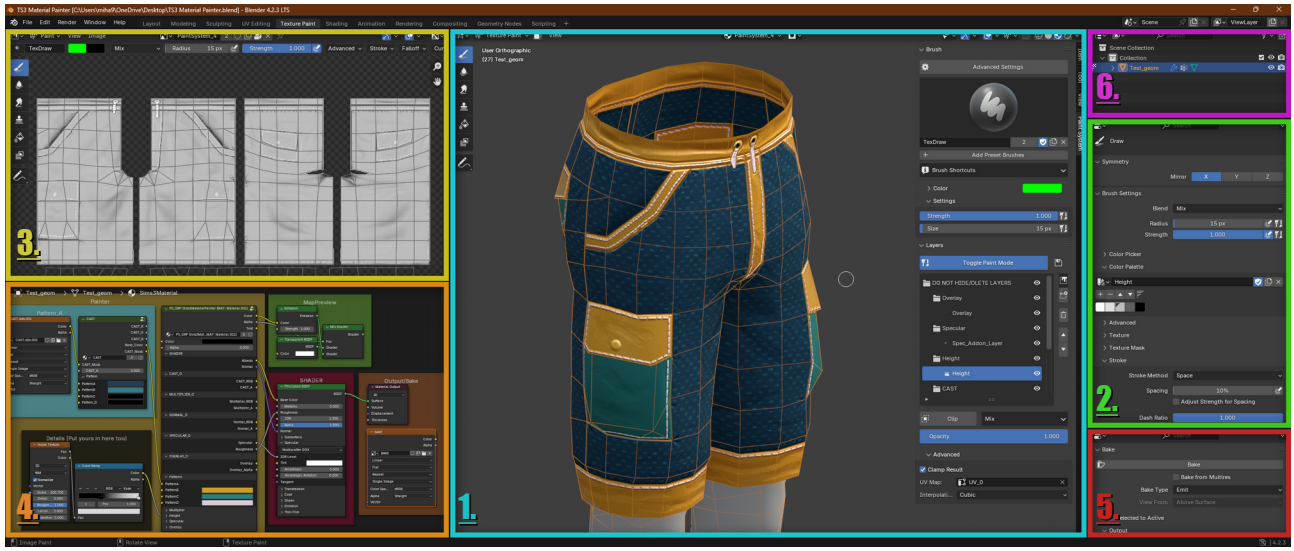
This tutorial covers everything from the interface of the painter template, to the basics of texturing in blender, plus a few tidbits for creators who wish to tackle more advanced texturing (6.Addendum).

Prerequisites:

- **Blender 4.2+** (Get blender HERE)
- **Paint System** addon for blender, HERE

Getting Started:

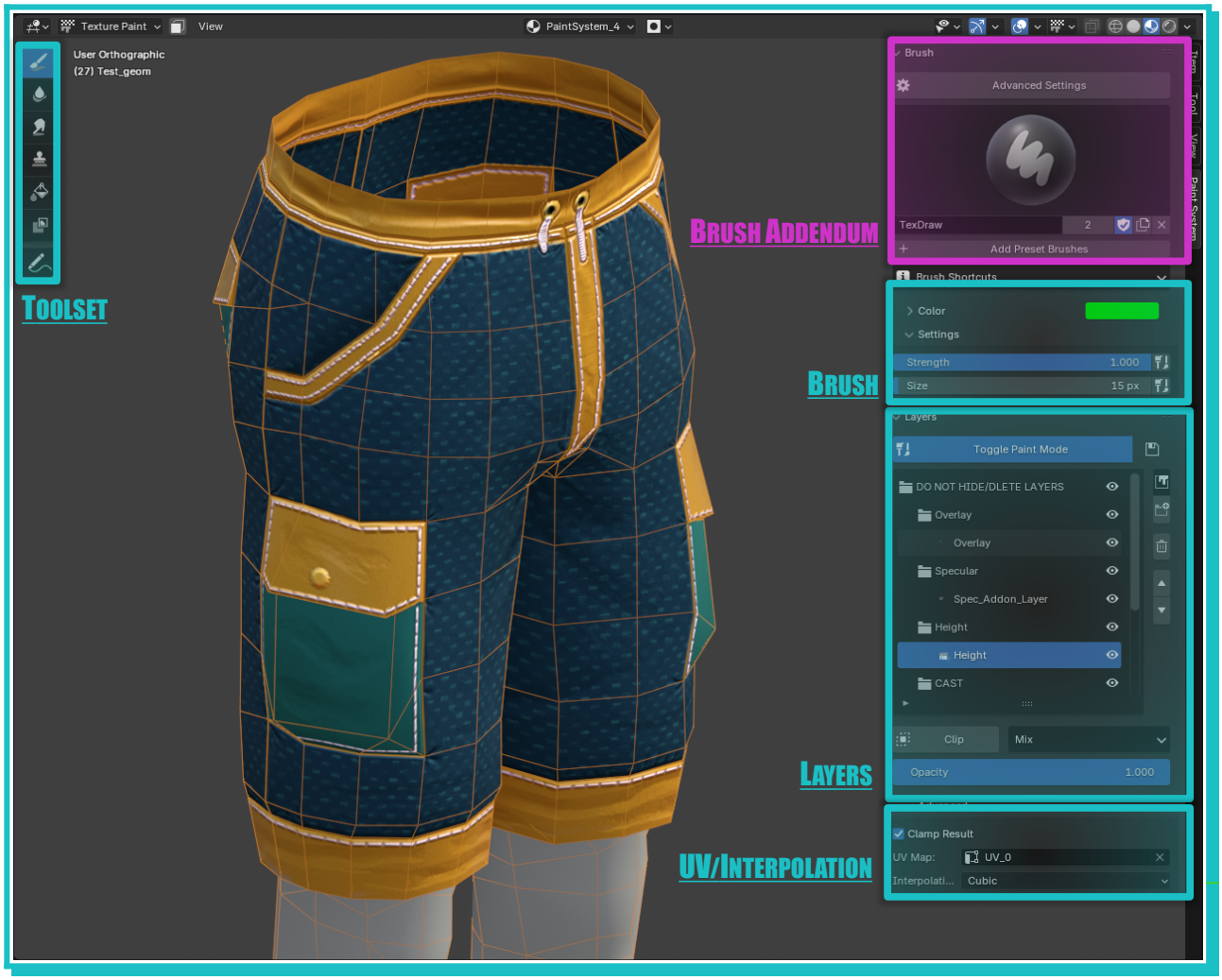
Once you've installed prerequisites, and downloaded TS3 Texture Painter Blender template (*if you don't have it already*) from HERE, opening it it looks something like this:



Click any step number, starting from 1., to easily jump to different steps in the tutorial. Click a heading of any chapter to go back to this map.

1. 3D Texturing Workspace

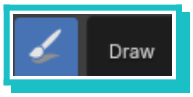
You will spend most of the time in this area. It is where you'll paint details on the mesh, directly, and choose which of the 7 base layers to paint in.

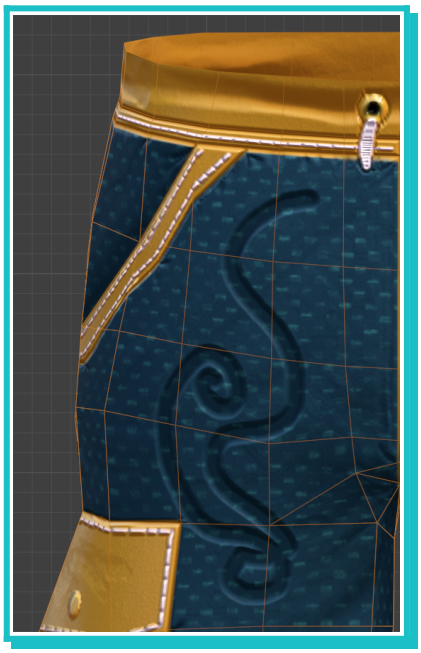


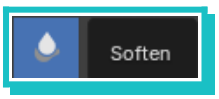
Click on any highlighted area to learn more about it, and continue the tutorial (Some areas skip to later tutorial sections).

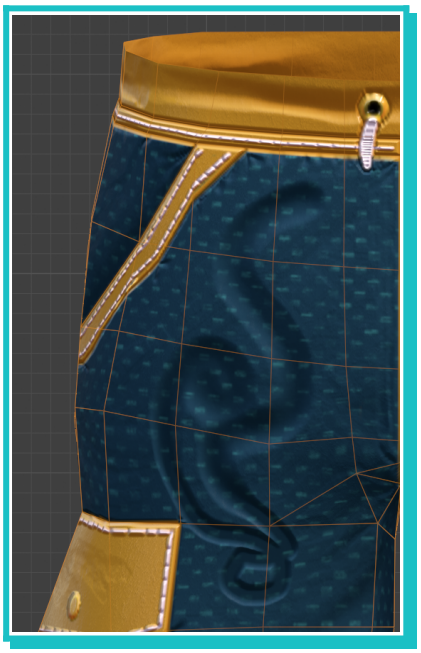
Toolset

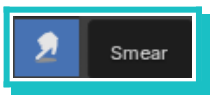
There is three basic but very significant tools to use to paint almost anything you'd want.

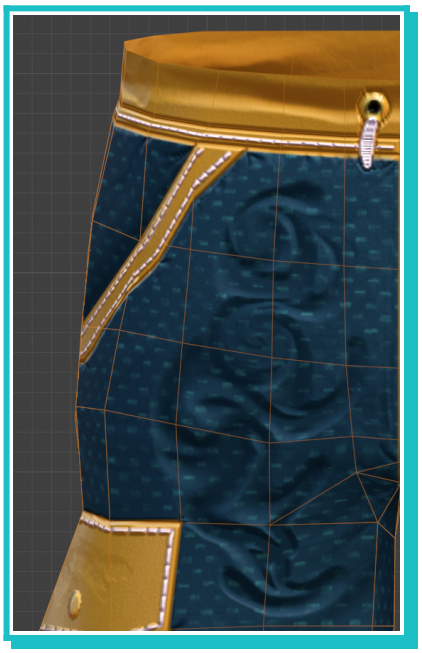






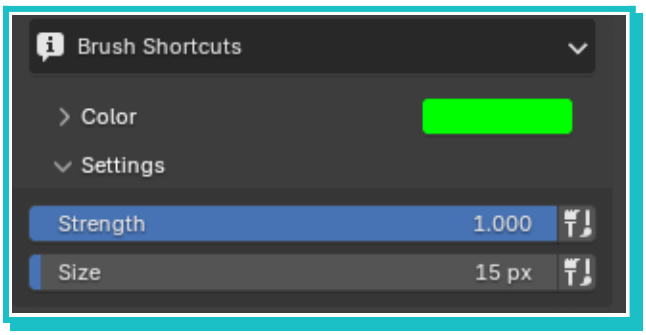






There is a few other tools to use from this selection, but they are either too advanced or much more useful in a different context to be mentioned here.

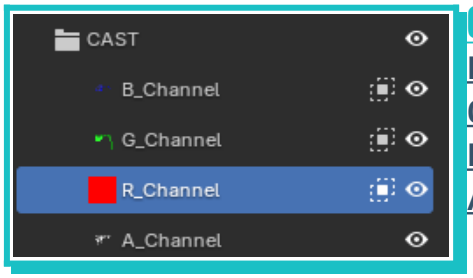
Brush



Settings like brush color, strength or size, quick menu with less options. Best used as quick brush strength/size change (right click).

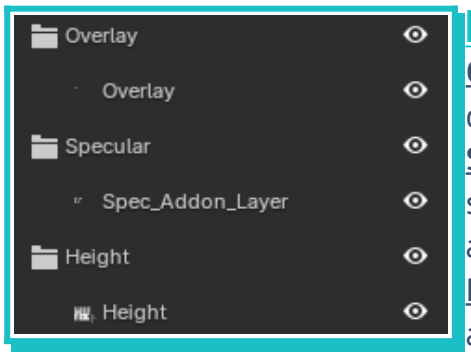
Layers

These are the base 7 layers you'll be painting on in order to get generated textures:



Cast Channel Layers:

R_Channel – Pattern 1 (Red color only)
G_Channel – Pattern 2 (Green color only)
B_Channel – Pattern 3 (Blue color only)
A_Channel – Pattern 4 (White color only)



Height/Specular/Overlay:

Overlay – Non-CASTable part of the texture, you can draw here directly with any color you want.
Spec_Addon_Layer – Paint on this layer to replace specular values from the generated layer, manually adding specular details.
Height – Main paint layer, this layer generates almost all of the multiplier, specular and normal map.

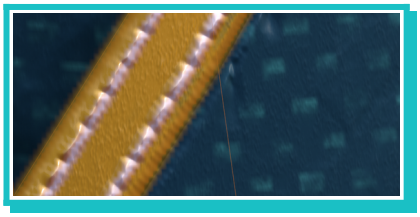
Do NOT hide, delete, add or change blend mode of the layers!!!

Use opacity slider to hide/show a layer, instead.

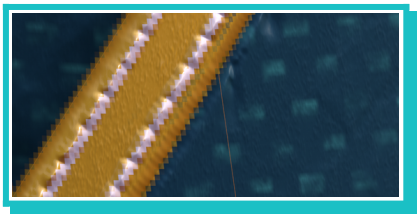
UV/Interpolation

Here you can change UV map (if using multiple) the layer is using, as well as the way the pixel difference is interpolated.

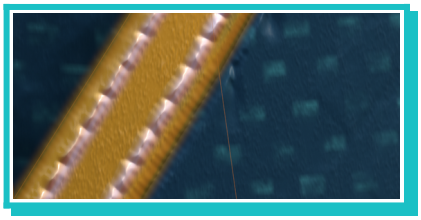
Linear



Closest



Cubic/Smart



Interpolation is just for viewing purposes, advised to leave on default.

2. Palette and Brush Settings

These are additional brush, painting and color settings that you can and should utilize to paint on the layers presented.

Symmetry

Turn on/off painting symmetry on X,Y,Z axes

Brush Settings

Set brush blending mode (add, multiply, overlay etc) as well as radius and strength.

Color Palette

Choose palette to use. Different palettes are to be used with different layers.

Stroke & Falloff

Additional brush settings. Stroke, spacing, jitter are all about how the brush's directed over and applied to the model/texture.

Click on any of the highlighted areas to learn more about them.

Symmetry

Symmetry is used to copy your brush movement from one side of the local/object cooridnate axis to another.

X symmetry

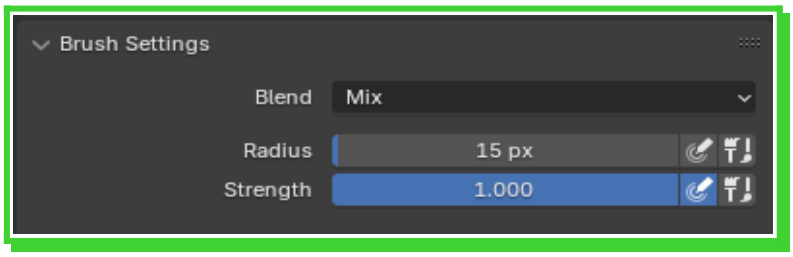
Y symmetry

Z symmetry

Note that you can turn on multiple or even all axes to be affected by the symmetry, it can be very useful depending on which results you want.

Brush Settings

From changing blend modes for the brush, to its radius and strength, these are the main brush settings you'll be using.



Mix blend mode is the standard blend mode. All values and colors beneath are replaced (instead of blended) with the ones you're painting with.
Overlay blend mode is useful if you want to add both shadows and highlights, while keeping vibrancy of the colors beneath them.
These two blend modes are useful when painting the Overlay and CAST layers.

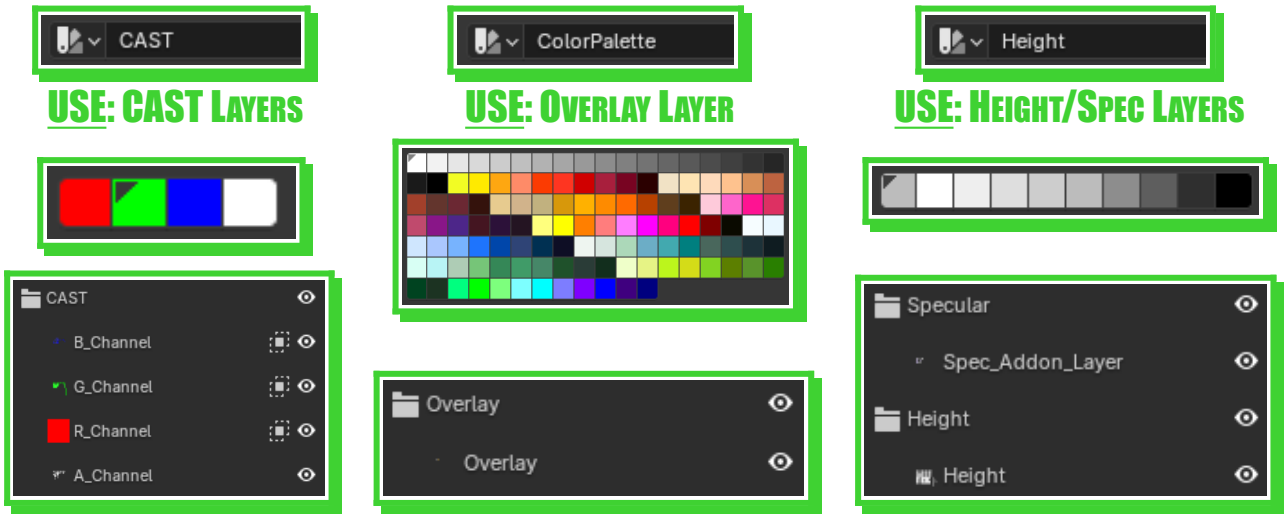
Multiply blend mode is used if you want to paint in the shadows.
Add blend mode is useful if you want to paint in the highlights.
These two blend modes are useful for painting the Height and Specular layers.

Do not forget to change back to desired blend mode when changing layers/methods of painting.

That is, unless you're using...

Color Palette

Color palette is used to easily access different color palettes in the .blend file. Here you can see three color palettes:



As you can see, each palette is used for a different layer:
- **CAST** – CAST RGBA Layers
- **ColorPalette** – Overlay Layer (use whatever color you like here)
- **Height** – Height and Specular Layers

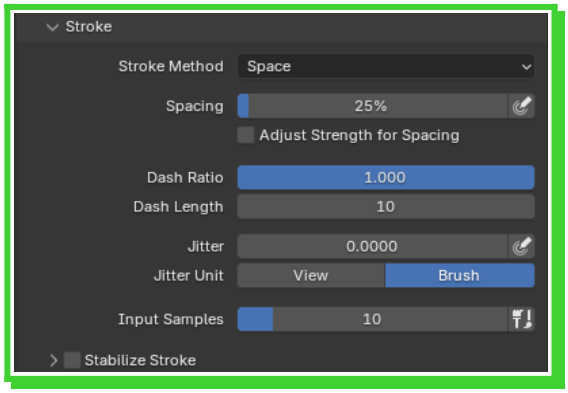
To reiterate, for **CAST** use **ONLY**:
red for ***R_Channel***
green for ***G_Channel***
blue for ***B_Channel***
white for ***A_Channel***

For the **Height**, ***base height value*** is included ***first*** in its respective color palette (but is also still located in the middle):

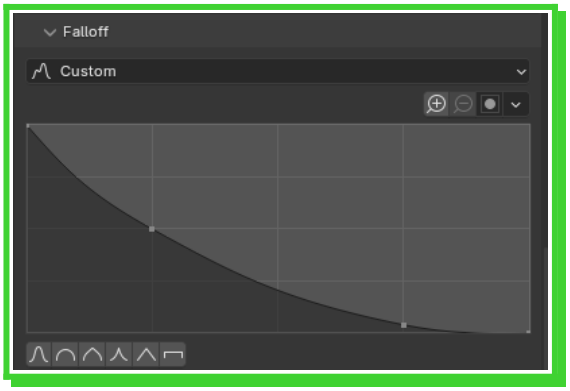
Anything below that value will create 'valleys', and anything above that value will create 'hills' on the surface. Darker/lighter the value is, the painter features are more prominent.

Stroke & Falloff

Stroke settings affect the stroke in which the brush is applied.
Falloff settings affect the brush softness and shape.



Stroke

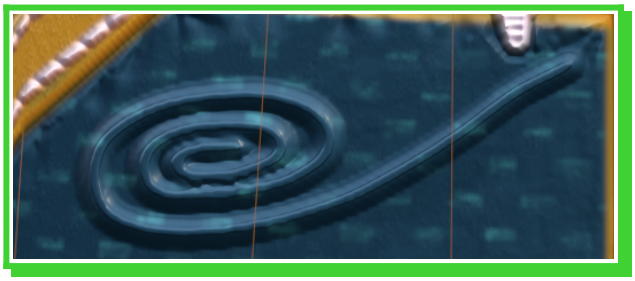


Falloff

Stroke settings, as follow:

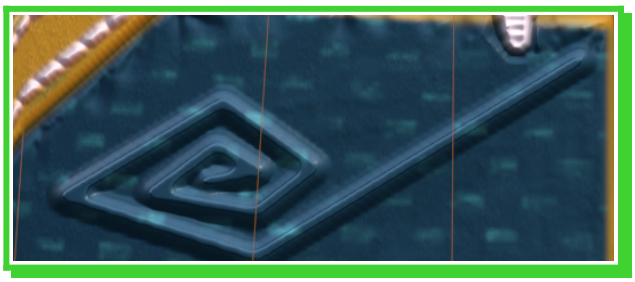
Space

Creates brush strokes as series of dots whose distance you can set with Spacing setting.



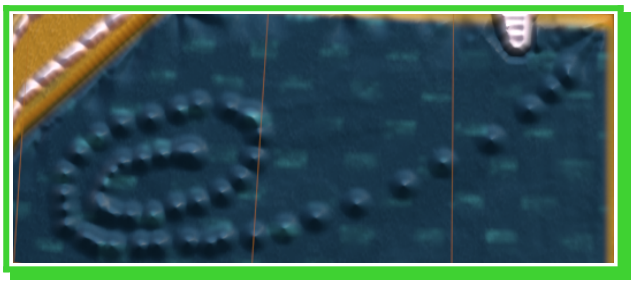
Line

Drags the stroke in a straight line, from point A to point B.



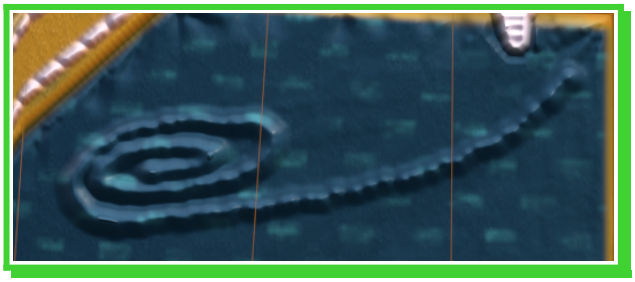
Airbrush

With right settings, this stroke setting can be used for an airbrush effect. Continuously applies paint on mouse hold.



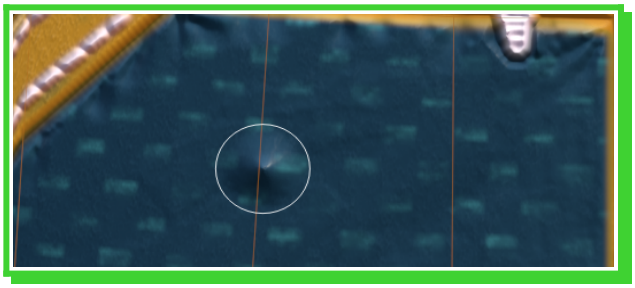
Dot

This setting drags dots across your strokes, on each mouse-step.



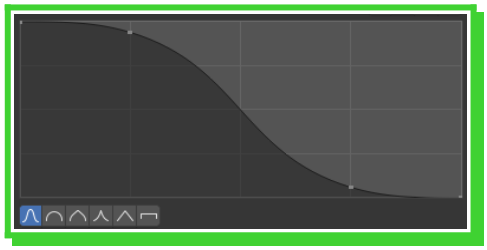
Dot Drag

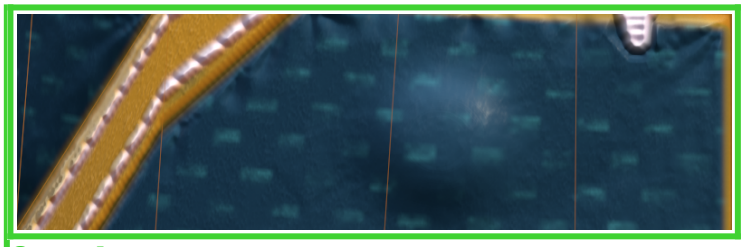
Places one single brush instance. It's useful for things like stickers or unique, one off details.



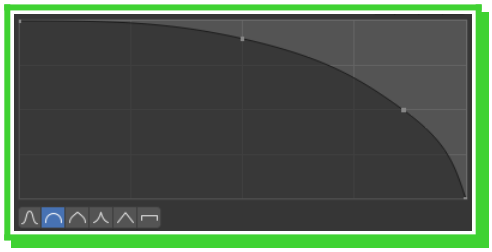
There are some strokes, and stroke settings that are left out, just because they aren't as easy to use or set-up. Look them up, or experiment yourself.

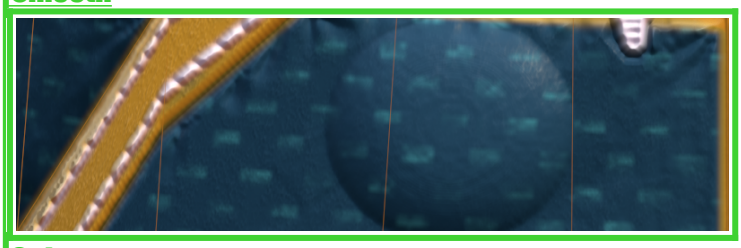
Falloff settings, as follow:



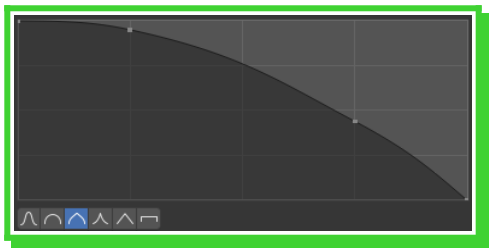


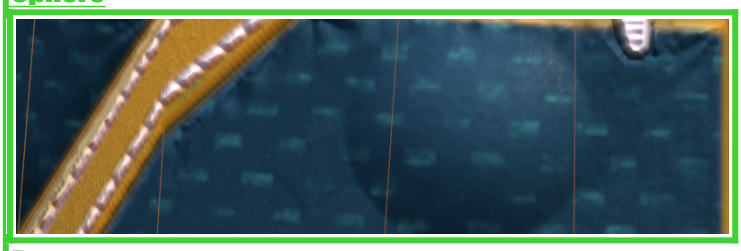
Smooth



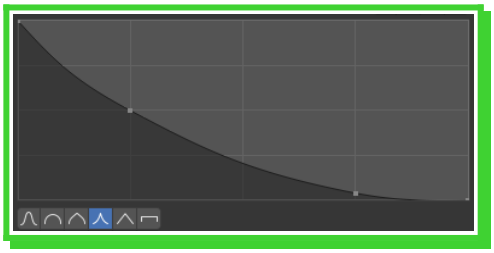


Sphere

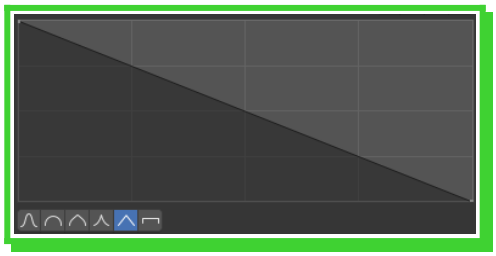


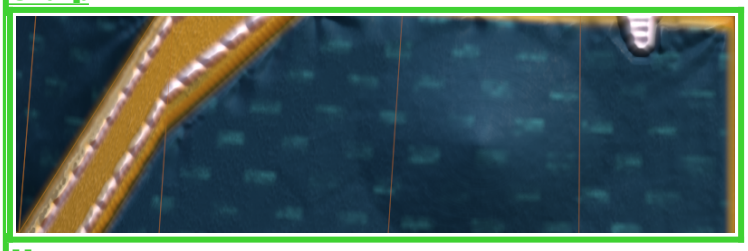


Root

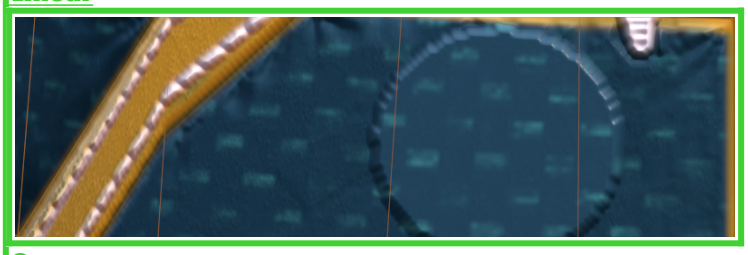


Sharp





Linear

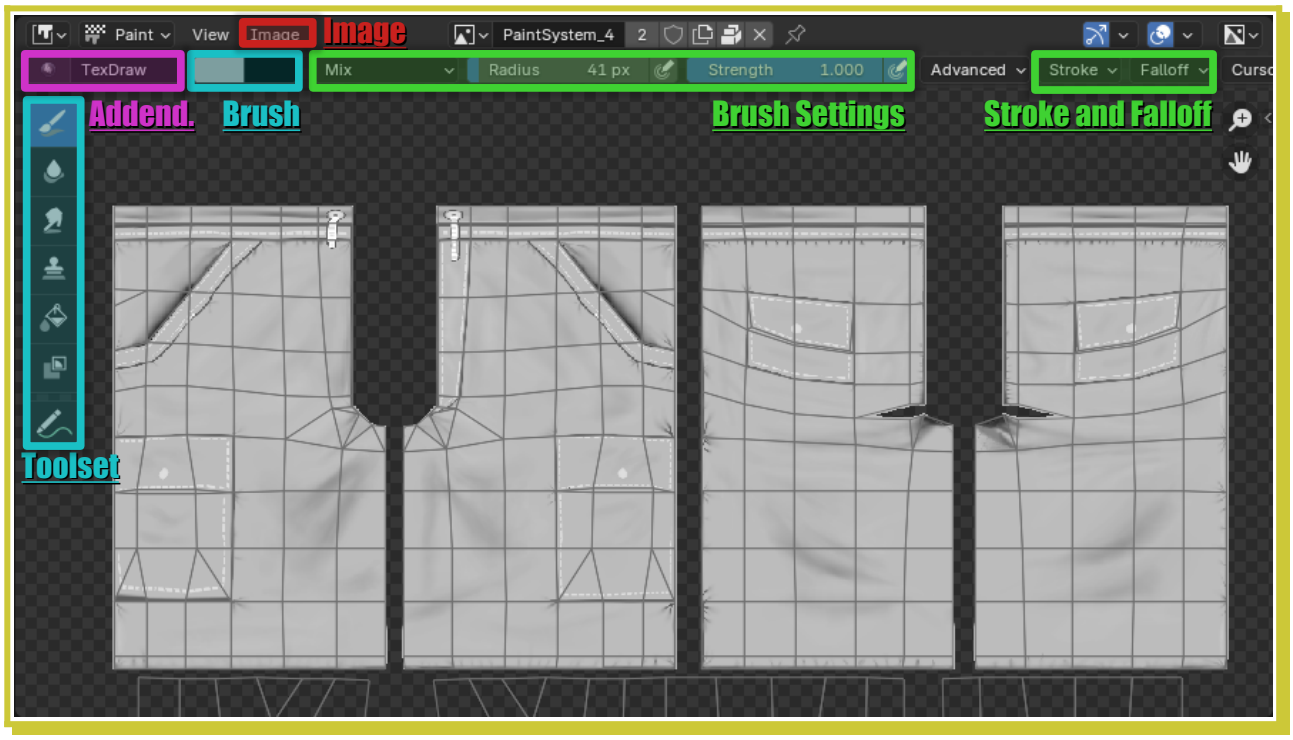


Constant

Select others from drop-down menu, or make new ones using curves.

3. 2D Texturing Workspace

This is just a 2D texturing workspace, with same tools that have been described so far. You can draw on the texture itself here.

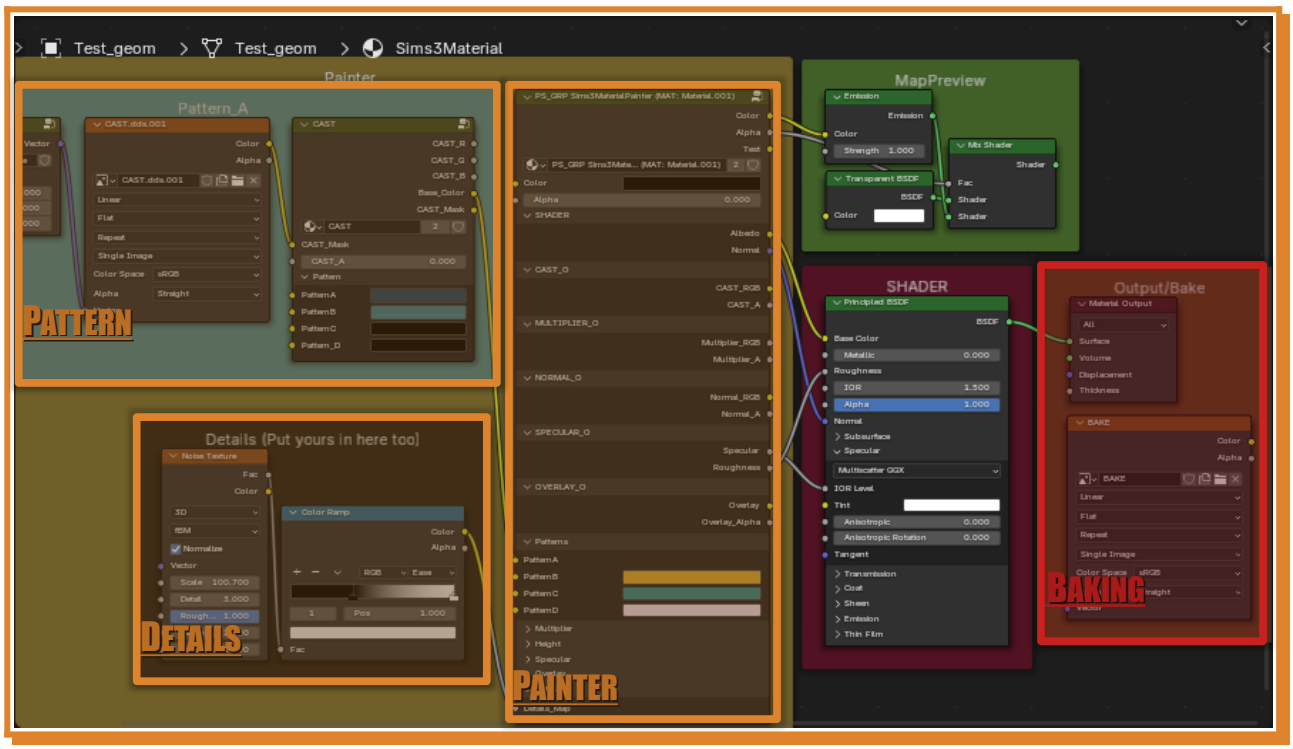


Click on any of the highlighted areas to go to its respective tool description in this tutorial.

4. Material Settings

This is where the magic truly starts, here you can tweak each texture/material map individually, in great detail, and this is also where you prepare the data for baking.

Let's start with the map of the painter.

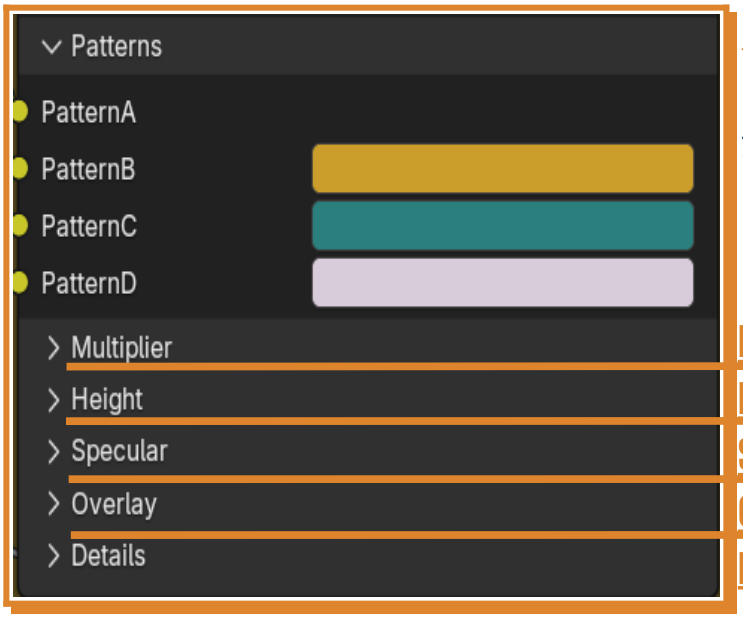


Click on any of the highlighted areas to learn more about them.

Painter

Here you will be tweaking the look of the final material, through a lot of options for each of the final textures.

Let's examine the ***INPUT*** branch of the painter:



Patterns

CAST Pattern/Color input.
You can either set this to a color, or input a game-ready pattern mask.

Multiplier

Height (Normal)

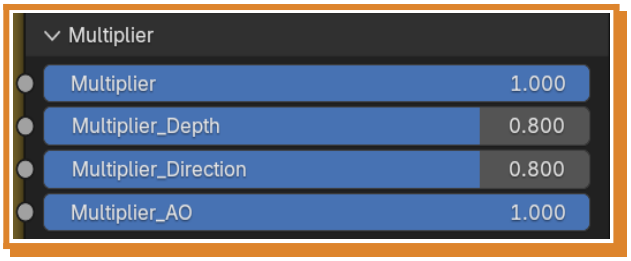
Specular

Overlay

Details

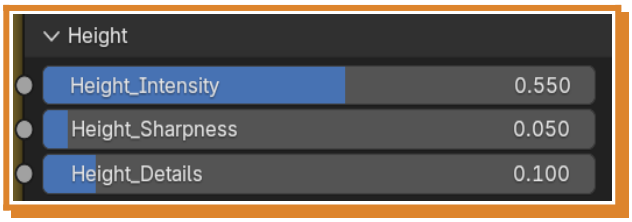
Multiplier

Based on *Height layer*, you can change intensity of Multiplier **depth** shading, **direction** shading and **AO**, as well as overall Multiplier.



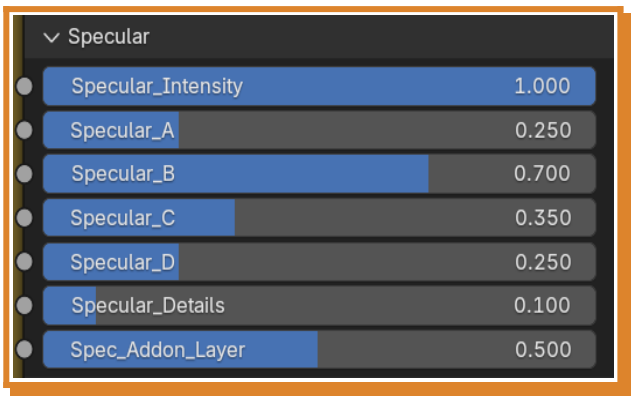
Height (Normal)

Based on *Height layer*, change the **intensity** and **sharpness** of the generated normal map, as well as intensity of **Details** normal map.



Specular

Based on *Height and Spec_Addon layers*, you can set **intensity** of Specular by CAST channels, intensity of Specular generated from **Details**, intensity of **Spec_Addon_Layer** as well as overall Specular intensity.



Overlay

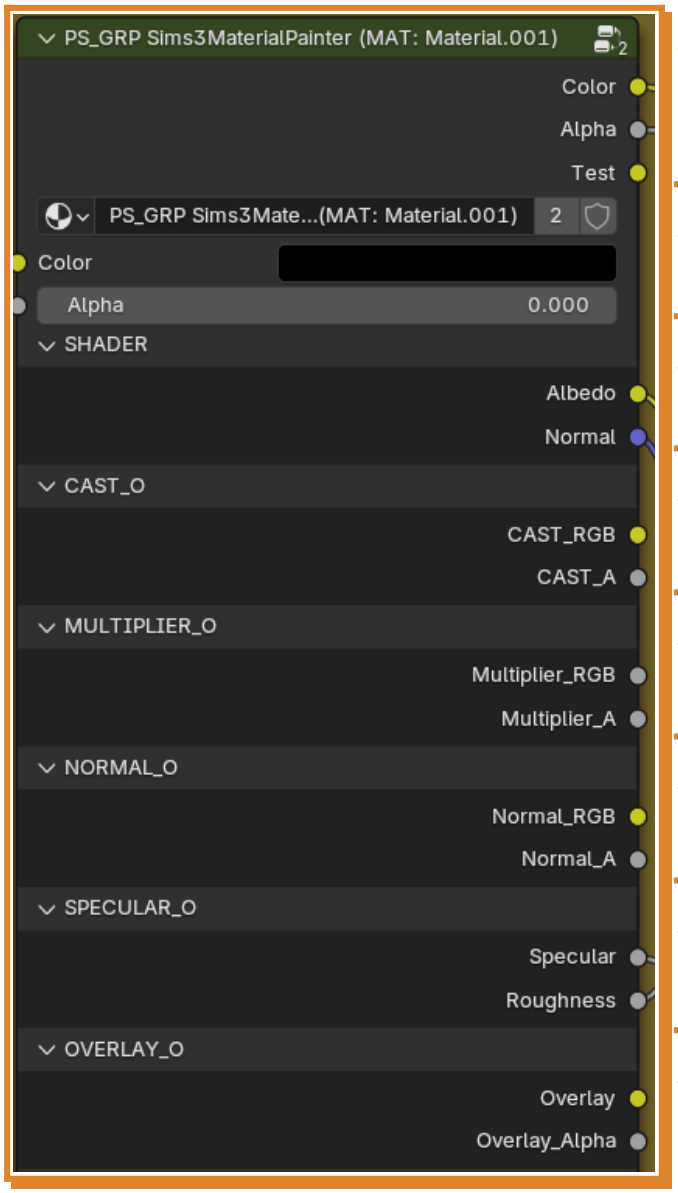
Based on *Overlay layer*, you can set **Hue**, **Saturation** and **Value** of the Overlay, as well as **Specularity** of the Overlay parts of the texture.

Details

Here you can input **Details** texture, to add micro details to the material.

You can, in real time, observe the changes in the material. However, this is not 100% reliable (*blender's eevee and sims 3 are two different rendering engines*). For that, we're moving on to the next step, to preview final textures (*and get them ready for baking*).

Let's examine the ***OUTPUT*** branch of the painter:



Paint Layers Output
Only for previewing internal painter layers.

Paint Layers Input
Same as the above.

Shader
Shader outputs.

CAST_Output
CAST map RGB + A output.

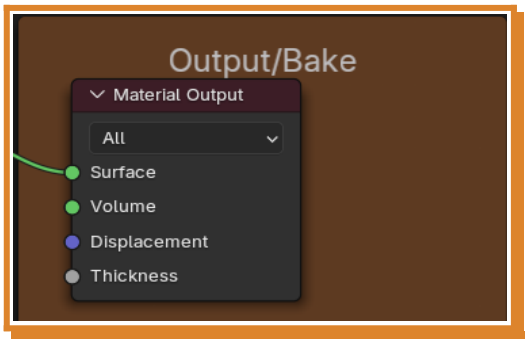
MULTIPLIER_Output
Multiplier map RGB + A output.

NORMAL_Output
Normal map RGB + A output.

SPECULAR_Output
Specular map RGB + A output (+rougness control for uses other than sims 3).

OVERLAY_Output
Overlay map RGB + A output.

These can be previewed by plugging them into **Output** node in the Output/Bake section of the Painter.

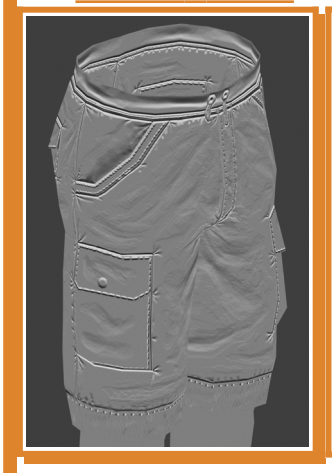


Output:

Shader

Cast_RGB

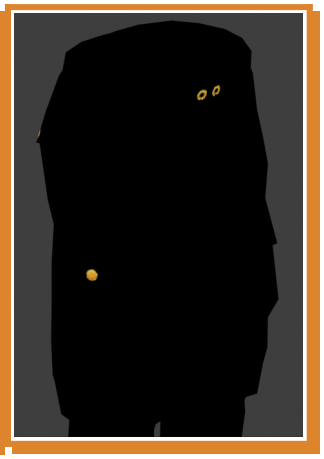
Multiplier_RGB



Normal_RGB

Normal_A

Specular



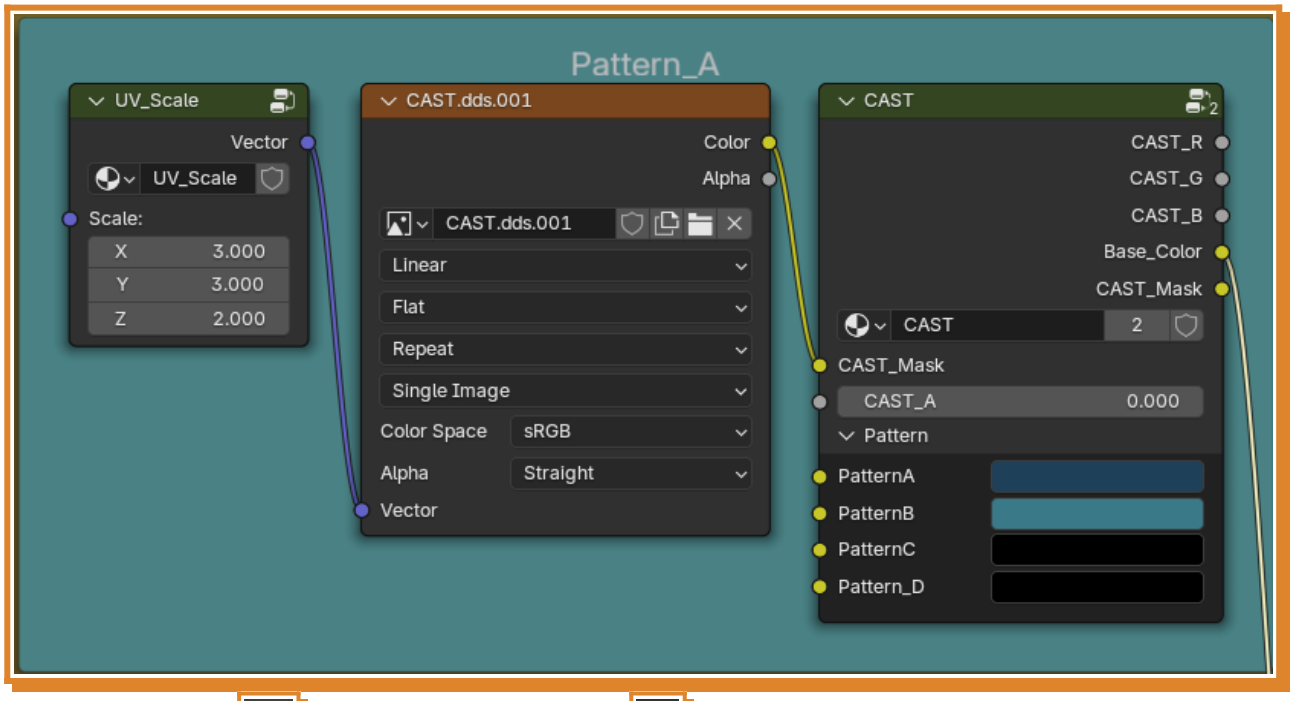
Overlay_RGB

The textures are ready to bake, we can move onto the **Next Step**, or we can take a look at few more things.

Pattern

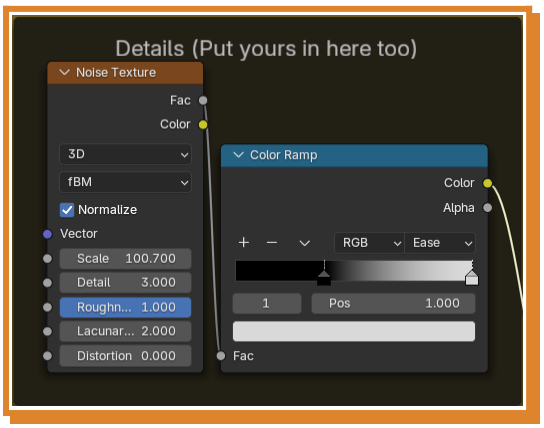
You can input a CAST pattern (*if you have its RGB mask*) into color input node for Pattern_A/B/C/D of the texture painter.

To add more than one, select, copy and paste this whole set-up here:



Then create and choose/open a new texture instead of the copied one, choose pattern colors, and finally connect the result into the desired pattern on the Painter.

Details



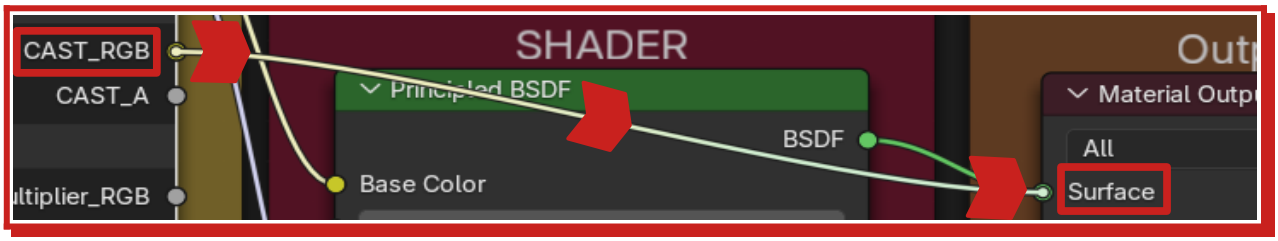
Details are **black and white** textures, including blender's internal **procedural noise** textures, that you can utilize to add **micro details** to the material, like fabric, micro scratches or tiles.
These would also be considered *Height Data*.

5. Baking Final Textures

Now that we're done with painting, setting up the material and previewing the final textures on the mesh, we can bake the textures, one by one. How do we do this?

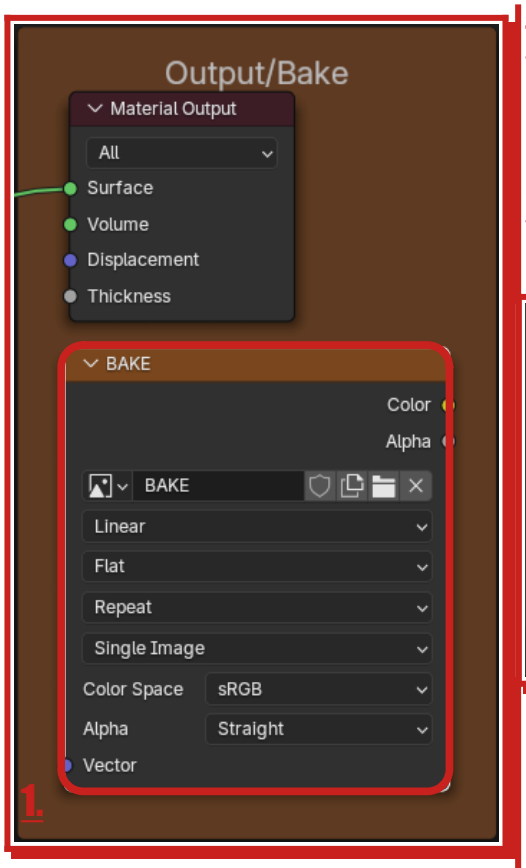
Baking And Exporting As PNG

First, input your chosen material texture into the material output.



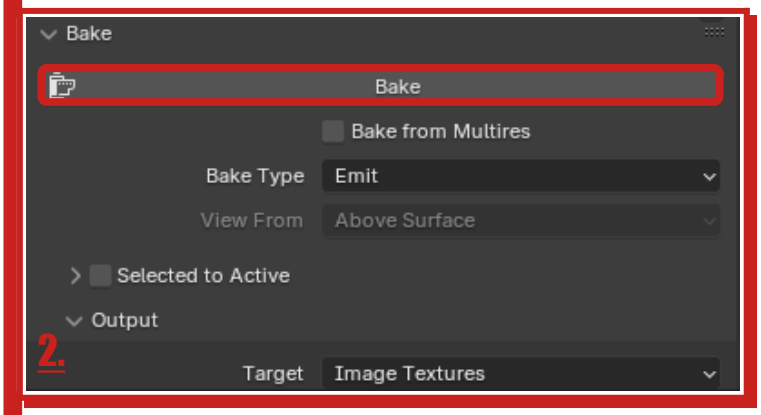
EXAMPLE: Inputting CAST_RGB Into The Output Node

Then:



1. Select the premade **BAKE** texture in the Output/Bake section of the painter.

2. Then go over to Bake menu of the file and Press **Bake** (*already set to Emit*).



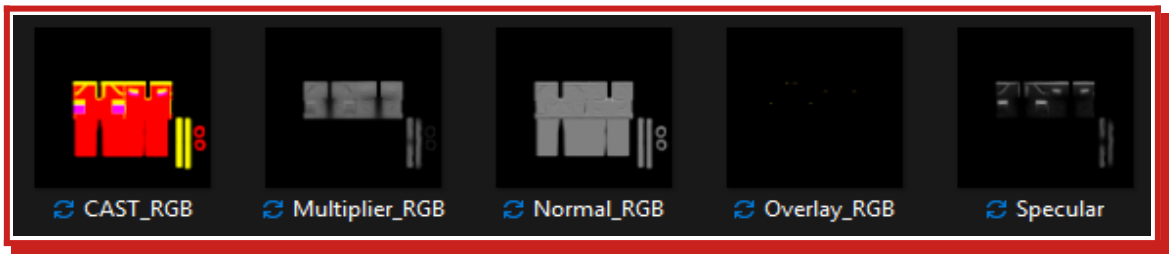
Now wait patiently while the texture bakes...

Once baked, the texture will be stored in the .blend file, and you can export it.

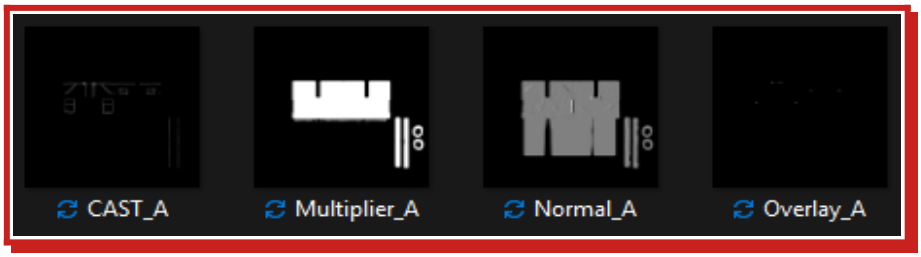
To export the textures, we need to go to **2D Texturing Workspace**.

If the texture is not showing or isn't selected, choose the drop down menu and select the **BAKE** texture:

Then select **Image* > Save As**, and save as PNG, with 0% compression. (*Image will have a * when the images in the .blend file have been changed.*)



SAVE _RGB OUTPUT TEXTURES (+SPECULAR) TO THE RGB FOLDER



SAVE _A OUTPUT TEXTURES TO THE ALPHA FOLDER

Do this with all remaining material textures (*Multiplier RGB+A, Normal RGB+A, Specular, Overlay RGB+A*) from the start of this step, all over again, until you've baked and exported all necessary textures for use in the game.

Combining And Exporting As DDS

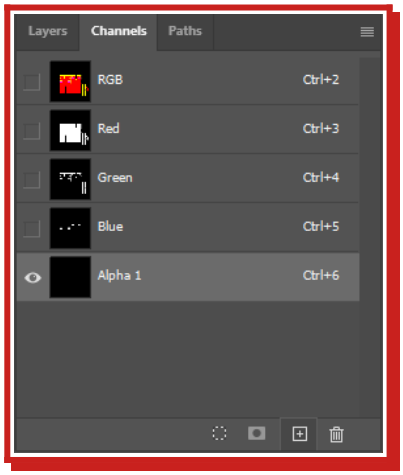
Once all textures are baked and ready, we will need to combine their RGB channels with Alpha channels and export them as DDS texture.

First, we'll need Nvidia's DDS texture tools. I suggest getting it here. You can choose either the standalone app or Photoshop plugin.

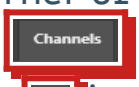
Now, open your preferred photo editor. Mine is Photoshop, so I will be doing this in Photoshop. For your photo editor, I suggest looking up its ability to add and edit channels, it is integral.

Now we'll combine the channels (*skip for Specular Map*).

1. Open _RGB Texture(s)



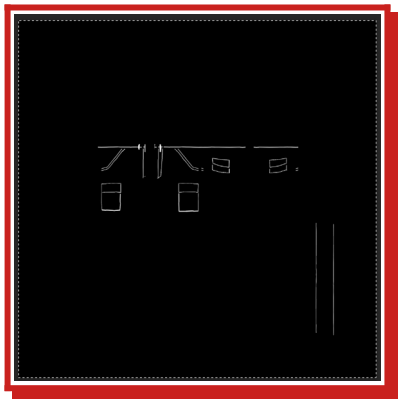
2. Go to lower right corner of the window, and click on Channels.



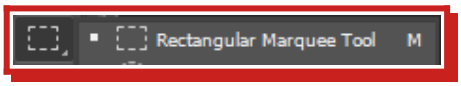
Then click on little plus icon in the very corner to Create new Channel.

This will make a new Alpha Channel, ready to be edited.
Keep the texture tab open.

3. Open _A Texture(s)

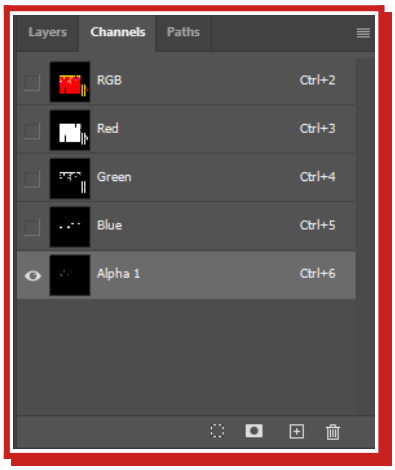


4. Select the whole texture using the Rectangular Marquee Tool.



You can quick select it by pressing M, or select it in the toolbar on the left side of the screen.

5. Copy the texture with Ctrl+C

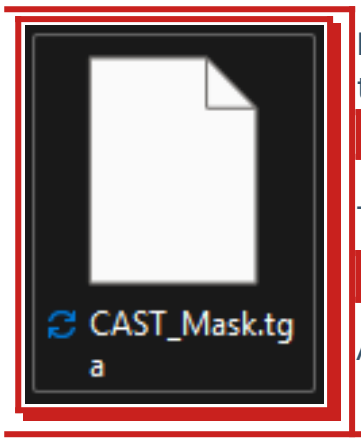


6. Go back to _RGB texture tab, and with only Alpha Channel selected in the Channels menu, paste the copied alpha data with Ctrl+V.

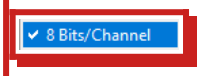
Then click on RGB Channels' eye icon to make them visible:

Final step is to export as DDS.

1. Preferable way to do this is to export to TGA (Targa) format (*skip this step for Specular Map – you can use its PNG in next step*).



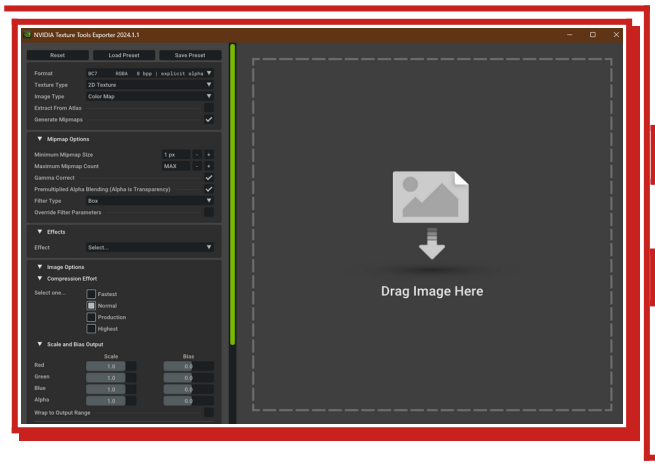
If you're on PS versions post 2020, make sure that image is set to 8 bit mode by going to Image > Mode > 8 bits/Channel.



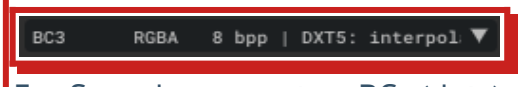
Then, go to File > Save a Copy > Save as Type: Targa.

And Save the file.

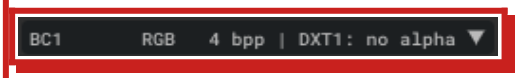
2. Then use the NVIDIA Texture Tools, open TGA and export as DDS.



For CAST Mask, Multiplier, Normal Map and Overlay export as BC3 (dxt5).



For Specular, export as BC1 (dxt1).



Set Compression Effort to Highest.

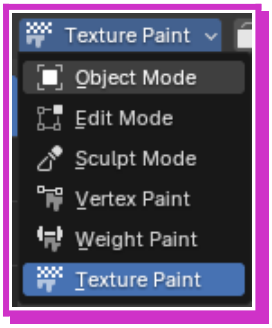
However, there's another way to do this, without resorting to saving to TGA format. If you have Nvidia Texture Tools DDS Plugin for Photoshop (and it works), you can directly export to DDS texture, the same way we exported to TGA (*without changing to 8 bit*).

This is where the tutorial ends, however, if you want to learn a few more useful tips, read further.

6. Addendum

Here, we'll go over few useful tips to know when using blender's texture painter in general, and additional, more advanced stuff.

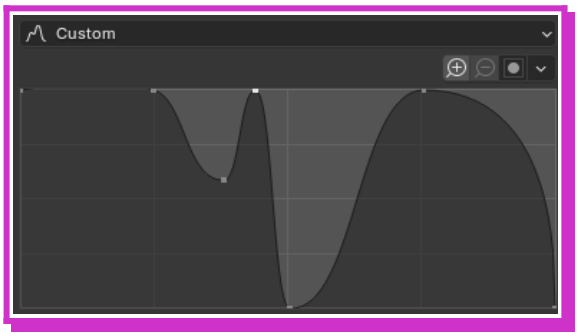
1. SWITCHING OBJECTS AND MODES IN TEXTURE PAINT MODE:

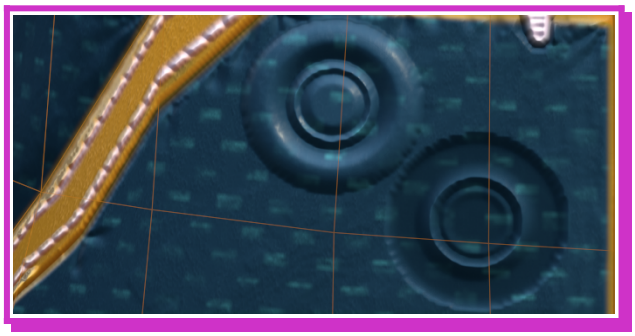


In order to select another object to texture paint on, you need to first switch to Object mode, select that object, and then go back to Texture Paint mode.

2. CREATING CUSTOM FALLOFF:

You can always create a custom brush falloff by manipulating curves, see example:



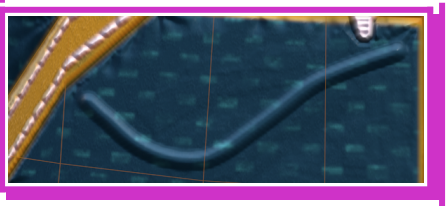


This will allow you to create a lot of unique designs.

3. ADDITIONAL STROKE SETTINGS:

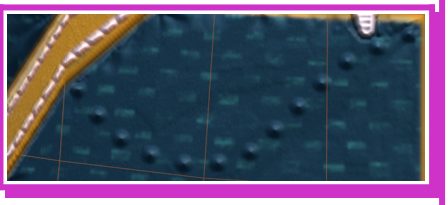
Dash:

Dash Ratio	1.000
Dash Length	10



Continuous Dash

Dash Ratio	0.000
Dash Length	50

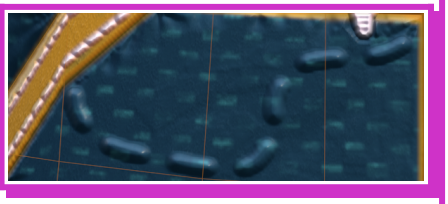


Dot Dash

Dash Ratio	0.500
Dash Length	50

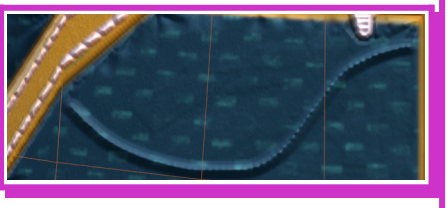
Short Dash

Dash Ratio	0.500
Dash Length	100



Long Dash

Dash Ratio	0.000
Dash Length	10

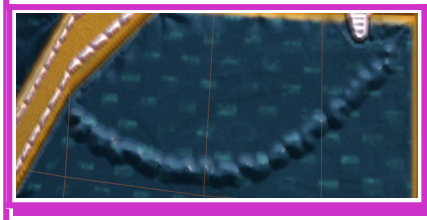


Dragged Dot

Jitter:

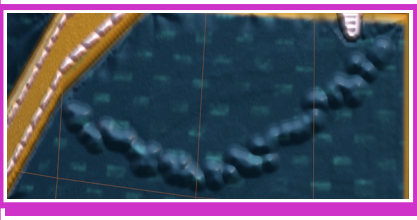
Jitter	0.2500	
Jitter Unit	View	Brush

Low Jitter



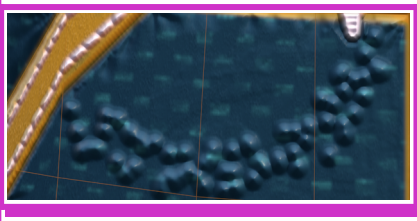
Jitter	0.5000	
Jitter Unit	View	Brush

Medium Jitter



Jitter	1.0000	
Jitter Unit	View	Brush

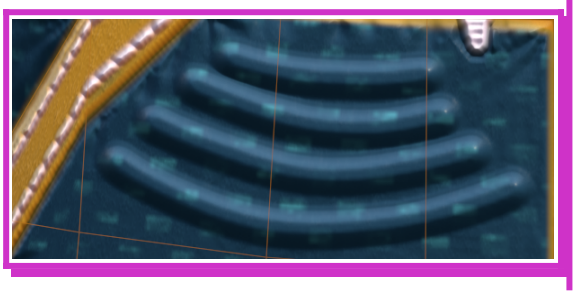
High Jitter



Default Jitter is 0

Stabilize Stroke

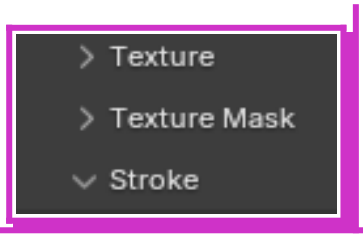
Stroke stabilization, similar to Photoshop's.



It allows for slower but more precise/clean movement of brush strokes, also useful for shaky hands.

4.CUSTOM BRUSHES

Custom Brushes are user made brushes, utilizing brush textures and texture masks, as well as previously explained options.

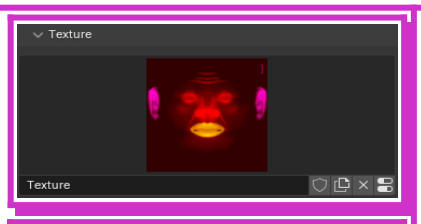


Located right above Stroke options, these are powerful two options that allow creation of custom brushes for any in-blender use, even ones that can apply CAST and Height data at the same time.

This is still pretty advanced and can get very in depth, so I'd advise looking up tutorials online, like this one for beginners here.

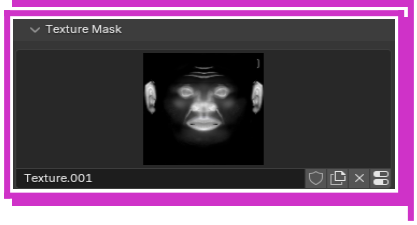
But you can see here how easy it is to add pre-made details all over your texture, if you have a custom brush.

I've saved a Brush Pair. You can import and test out in the painter as a new brush and save it (if that's what you need).



Brush Texture

This texture defines the colors and values that the brush will paint.Useful for CAST Layer (can be useful for Height Layer).



Brush Texture Mask

Alpha Mask that defines where brush is applied and where it's not. Useful for Height Layer, if there's no Brush Texture.

5.PAINTING CREASES AND FOLDS

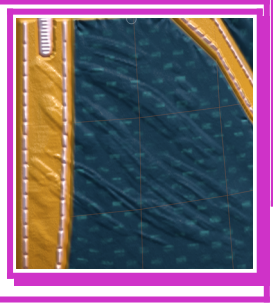
Painting creases/folds is a bit more complicated to master compared to previous steps, but once you do, it will be much less time consuming and frustrating than previously explained tools.

I will just cover some basics here quickly.

CREASES

Values lesser than 50%.
Different crease sizes and intensity paired with different distance between creases can make all sorts of different crease effects.

FOLDS

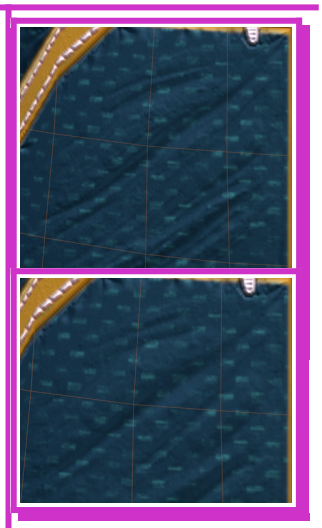


Values greater than 50%
Usually form between two creases or on the edge of them, but you can also paint them in without creases.

FLOW

Flow of the creases and folds is something you have to determine yourself.
Only you know how you want your piece to look. Always good to look at references, whether it be EAxis or real life.

SOFTENING



Softening creases helps make them believable,
as some brushes can often leave jagged edges with multiple brush layering.

You can soften using, logically, Soften tool from **Toolset** section of this tutorial. Soften tool from farther away (zoomed out) has a stronger effect!

But you can also make blend in 50% Gray value, layering it over the areas you want to blend.